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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,508	10/18/2001	Masaou Matsuda	358362010400	5230

7590 06/26/2003

Barry E Bretschneider
Morrison & Foerster
2000 Pennsylvania Avenue N W
Washington, DC 20006-1888

[REDACTED] EXAMINER

BOYD, JENNIFER A

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

1771

DATE MAILED: 06/26/2003

61

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/889,508	MATSUDA ET AL.
	Examiner	Art Unit
	Jennifer A Boyd	1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 May 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5 and 6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1 - 7 in Paper No. 8 is acknowledged. In light of the Applicant's arguments, the lack of unity restriction is withdrawn and the Examiner will examine claims 1 – 11.

Specification

2. The abstract of the disclosure is objected to because it is not in proper format. The abstract may not exceed 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 - 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites physical properties of a phosphorus compound copolymerized polyester (i.e. loss tangent in a dynamic viscoelasticity measurement, temperature at which loss tangent reaches the maximum and birefringence). *Ex parte Slob*, 157 USPQ 172, states the following with regard to an article claimed by defining property values:

Claims merely setting forth physical characteristics desired in article, and not setting forth specific compositions which would meet such characteristics, are invalid as vague, indefinite and functional since they cover any conceivable combination of ingredients, either presently existing or which might be discovered in future and which

Art Unit: 1771

would impart desired characteristics; thus expression "a liquefiable substance having a liquefaction temperature from about 40°C to about 300°C and being compatible with the ingredients in the powdered detergent composition" is too broad and indefinite since it purports to cover everything which will perform the desired functions regardless of its composition, and in effect, recites compounds by what it is desired that they do rather than what they are; expression also is too broad since it appears to read upon the materials that could not possibly be used to accomplish purposes intended.

Furthermore, it is necessary that the product be described with sufficient particularity that it can be identified so that one can determine what will and will not infringe. Thus, claims 1 - 11 are indefinite for reciting only the desired physical properties of the phosphorus compound copolymerized polyester, rather than setting forth structural and/or chemical limitations of said fabrics.

5. Claim 7 is indefinite because it is unclear to the Examiner if the Applicant intends to claim the catalyst. By definition, a catalyst is a chemical that accelerates a reaction. The catalyst is not part of the reaction but increases the rate at which it takes place. Therefore, the catalyst is only present in the system during the reaction but is not present in the final product. For this reason, the Examiner will not give weight to this limitation.

6. Claims 8 – 10 are indefinite because it is unclear what a "woven, knitted fabric" is. A fabric must be woven or knitted but cannot be both. For the purposes of examination at this time, the Examiner will assume the Applicant intends "woven *or* knitted fabric".

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 – 6 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Endo (US 4,157,436).

Endo is directed to a phosphorus-containing polyester (Title).

As to claim 1, Endo teaches a flame retardant polyester having a phosphorus atom content of 500 – 50,000 ppm (Abstract). Endo teaches that the flame retardant polyester can be spun into filaments and yarn (Example 10, column 23, lines 30 – 35).

As to claim 2, Endo teaches that the flame retardant polyester with a general formula as seen in the Abstract. Endo teaches that the compound has a – CH₂ – linkage which is equated to Applicant's A which a divalent or trivalent organic residue. Endo teaches that R₂ and R₃ are selected from a halogen atom and a hydrocarbon group having 1 to 10 carbon atoms as seen in the general formula and Abstract, equated to Applicant's R₂ and R₃. Endo teaches that the compound has a R₁ is an ester-forming functional group which is equated to Applicant's R₁. Endo teaches that n₁ can be 1 or 2 and n₂ and n₃ can have an integer of 0 – 4 (Abstract). It should be noted that various examples of the phosphorous compounds found in Endo are also found in the Applicant's Specification. For Example, Endo teaches an example labeled as (a) on column 4, lines 30 – 40 which is the same as example (a) of the Applicant on page 11.

As to claim 8, Endo teaches that the flame retardant polyester can be spun into filaments and yarns and knitted into a tricot (column 23, lines 7 – 34), which is known in the art to be a warp knitted fabric.

Although Endo does not explicitly teach the claimed properties detailed by the following formulas: $\tan \delta_{\max} \geq 0.1740$, $T\alpha - 3.77 \times \ln(dtpf) \leq 137.0$ and $1.331 \leq SG - \sqrt{\Delta n}/8.64 \leq 1.345$ as required by claim 1, a property of having not less than 6500 times up to an occurrence of cutting by abrasion under a load of 0.098 N/tex in a yarn abrasion test as required by claim 3, a tensile elongation to break (DE) of 20 – 50% as required by claim 4, a shrinkage in hot water (SHW) of not more than 10% as required by claim 5, the polyester meets the requirements of formulas 4 – 5 as required by claim 6, it is reasonable to presume that the properties detailed by the following formulas: $\tan \delta_{\max} \geq 0.1740$, $T\alpha - 3.77 \times \ln(dtpf) \leq 137.0$ and $1.331 \leq SG - \sqrt{\Delta n}/8.64 \leq 1.345$ as required by claim 1, a property of having not less than 6500 times up to an occurrence of cutting by abrasion under a load of 0.098 N/tex in a yarn abrasion test as required by claim 3, a tensile elongation to break (DE) of 20 – 50% as required by claim 4, a shrinkage in hot water (SHW) of not more than 10% as required by claim 5, the polyester meets the requirements of formulas 4 – 5 as required by claim 6 is inherent to Endo. Support for said presumption is found in the use of like materials (i.e. a phosphorous-containing polyester fiber) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties detailed by the following formulas: $\tan \delta_{\max} \geq 0.1740$, $T\alpha - 3.77 \times \ln(dtpf) \leq 137.0$ and $1.331 \leq SG - \sqrt{\Delta n}/8.64 \leq 1.345$ as required by claim 1, a property of having not less than 6500 times up to an occurrence of cutting by abrasion under a load of 0.098 N/tex in a yarn abrasion test as required by claim 3, a tensile elongation to break

(DE) of 20 – 50% as required by claim 4, a shrinkage in hot water (SHW) of not more than 10% as required by claim 5, the polyester meets the requirements of formulas 4 – 5 as required by claim 6 would obviously have been present once the Endo product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977). It should be noted that at this time the Examiner cannot search fiber fineness and density requirements because the values of those parameters are represent format in which they are dependent on inherent values.

Claim Rejections - 35 USC § 103

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US 4,157,436) in view of Siegrist et al. (US 4,008,224).

Endo teaches the inclusion of usual additives in the phosphorus-containing polyester such as pigments comprising titanium oxide which is a commonly known brightener. (column 12, lines 32 – 40).

Endo fails to include in the list of usual additives an organic fluorescent brightener.

Siegrist et al. teaches the use of fluorescent brighteners which are suitable for polyester and polypropylene fibers or textiles made therefrom (column 6, lines 53 – 62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fluorescent brightener of Siegrist in the polyester of Endo motivated by the desire to effectively whiten and brighten a polyester filament, yarn or fabric.

Endo discloses the claimed invention except for the level of fluorescent brightener present in the polymer is 0.01 – 1% by weight. It should be noted that the amount of fluorescent brightener is a result effective variable. For example, as the amount of brightener increases, the

Art Unit: 1771

polymer becomes whiter and brighter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the fluorescent brightener in the amount of 0.01 – 1% by weight since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of optical brightener to create a suitably white polyester substrate.

10. Claims 9 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US 4,157,436) in view of Vogt (US 5,952,413).

Endo teaches that the polyester of the invention can be knitted into a tricot (column 23, lines 30 – 35), which is known in the art to be a warp knitted fabric.

Endo fails to teach that the knitted fabric has undergone a raising treatment to create a sueded fabric as required by claims 9 and 10. Endo fails to teach that the fiber can be made into a nonwoven fabric as required by claim 11.

Vogt teaches a method of making a polyurethane suede-like material (Title). Vogt teaches that the textile fabric can comprise any synthetic fiber such as polyester (column 4, lines 45 – 48). Additionally, the fabric may be in any form such as woven, non-woven or knitted (column 4, lines 53 – 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a raising treatment to create a sueded fabric as suggested by Vogt in the application of Endo motivated by the desire to have an aesthetically pleasing and soft material.

It would have been obvious to one of ordinary skill in the art at time the invention was made to create a nonwoven fabric as suggested by Vogt with the polyester of Endo to expand the number of applications for the fabric.

Although Endo in view of Vogt does not explicitly teach the claimed coefficient of friction of a surface of 0.200 – 0.300 as required by claim 9 and after-flame time of not more than 3 seconds as measured by the Applicant's test as required by claim 10, it is reasonable to presume that the claimed coefficient of friction of a surface of 0.200 – 0.300 as required by claim 9 and after-flame time of not more than 3 seconds as measured by the Applicant's test as required by claim 10 is inherent to Endo in view of Vogt Support for said presumption is found in the use of like materials (i.e. phosphorus-containing polyester knitted or non-woven fabric with a sueded surface) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of the claimed coefficient of friction of a surface of 0.200 – 0.300 as required by claim 9 and after-flame time of not more than 3 seconds as measured by the Applicant's test as required by claim 10 would obviously have been present once the Endo in view of Vogt product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
June 20, 2003



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